

No.

200300088



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

Whereas THERE HAS BEEN PRESENTED TO THE

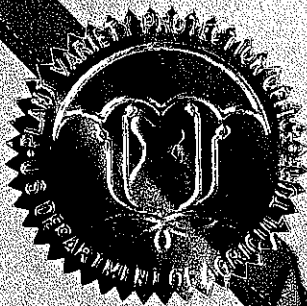
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (34 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'91M90'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this eighteenth day of July, in the year two thousand three.

Attest:

*Alfred M. Jones*

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Frederick C. S. Foreman*

Secretary of Agriculture

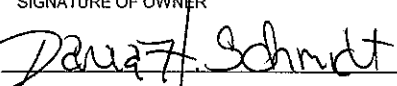
U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER Pioneer Hi-Bred International, Inc		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME	3. VARIETY NAME 91M90
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 7300 N. W. 62 <sup>nd</sup> Avenue P.O. Box 1004 Johnston, IA 50131		5. TELEPHONE (include area code) 515-254-2638	FOR OFFICIAL USE ONLY  PVPO NUMBER <b>2 705 000 88</b>  FILING DATE <b>1/28/03</b>
		6. FAX (include area code) 515-253-2478	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Corporate	8. IF INCORPORATED, GIVE STATE OF INCORPORATION Iowa	9. DATE OF INCORPORATION May 6, 1926	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers)			FILING AND EXAMINATION FEES: \$ <b>2705.00</b>  DATE <b>1/28/03</b>  CERTIFICATION FEE: \$ <b>432.00</b>  DATE <b>6/18/03</b>
<div style="display: flex; justify-content: space-between;"> <div> Daria Schmidt, Ph. D. 7300 N.W. 62<sup>nd</sup> Avenue P.O. Box 1004 Johnston, IA 50131-1004 </div> <div> Steve Callesline, Exq 7100 N.W. 62<sup>nd</sup> Avenue P.O. Box 1000 Johnston, IA 50131-1000 </div> </div>			
11. TELEPHONE (include area code) 515-254-2638	12. FAX (include area code) 515-253-2478	13. E-MAIL daria.schmidt@pioneer.com	14. CROP KIND (Common Name) Soybean
18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)		19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act	
a. <input type="checkbox"/> X Exhibit A. Origin and Breeding History of the Variety b. <input type="checkbox"/> X Exhibit B. Statement of Distinctness c. <input type="checkbox"/> X Exhibit C. Objective Description of Variety d. <input type="checkbox"/> X Exhibit D. Additional Description of the Variety (Optional) e. <input type="checkbox"/> X Exhibit E. Statement of the Basis of the Owner's Ownership f. <input type="checkbox"/> X Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input type="checkbox"/> X Filing and Examination Fee (\$2,705), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		<input type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input checked="" type="checkbox"/> X NO (If "no," go to item 22)	
		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
		21. DOES THE OWNER SPECIFY THAT THE CLASSES BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1, 2, 3, etc. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> X NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> X YES <input type="checkbox"/> NO IF YES, GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	
24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF OWNER  NAME (Please print or type) Daria H. Schmidt		SIGNATURE OF OWNER  NAME (Please print or type)	
CAPACITY OR TITLE Director, Technology Integration and Associative Genetics	DATE <b>1/13/03</b>	CAPACITY OR TITLE	DATE

## INSTRUCTIONS

**GENERAL:** To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$2,705 (\$320 filing fee and \$2,385 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$320 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvpo/pvp.htm>

200300088

## ITEM

- 18a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) evidence of uniformity and stability; and (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
  - (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
  - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
19. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
21. See Section 83 of the Act for the Contents and Term of Plant Variety Protection.
22. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
23. See Section 5.5 of the Act for instructions on claiming the benefit of an earlier filing date.

21. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

22. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

23. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

U.S. Patent 4,940,835 issued to Shah et al. as per the Roundup Ready Gene in this variety

**NOTES:** It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

To avoid conflict with other variety names in use, the applicant must check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center--East, Beltsville, MD 20705. Telephone: (301) 504-8089.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number for this collection of information is (0581-0055). The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact the USDA's TARGET Center at 202-720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

ST-470 (04-01) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces ST-470 (02-99) which is obsolete.

200300088

**Exhibit A. Origin and Breeding History of the Variety**

**Soybean Variety 91M90**

Variety 91M90 evolved from a cross made in the summer 1997 in Puerto Rico with the following parentage:

Parentage: 9234/92B05\*

\*92B05 is commercial variety with the Roundup Ready (40-3-2) gene

Variety 91M90 is an F3-derived line which was advanced to the F4 generation by modified single-seed descent. The F4 progeny row of 91M90 was grown in a plant row yield trial in the summer of 1999. Subsequently, 91M90 has undergone three years of extensive testing and purification and has been observed by the breeder to be uniform and stable for all plant traits from generation to generation, with no evidence of variants. On the basis of yield, Phytophthora root rot resistance, Soybean cyst nematode resistance, and resistance to Roundup branded herbicides, variety 91M90 was assigned a commercial number.

The purification block was grown in Minnesota in 2001 in 64 subline rows, of which 55 were harvested. A two-acre increase of 91M90 was grown in the winter of 2001/02 in Chile. One hundred twenty (134) acres of parent seedstock (foundation seed equivalent) and production seed were grown in the summer of 2002.

**Exhibit B. Statement of Distinctness****Soybean Variety 91M90**

Variety 91M90 is most similar to variety 91B91. Both varieties have purple flowers, tawny pubescence, and resistance to Roundup branded herbicides. However, 91M90 has multi-race resistance to *Phytophthora megasperma* as governed by the Rps1k gene whereas 91B91 does not carry a resistance gene at the Rps1 locus.

Variety 91M90 is also similar to variety 92B05. Both varieties have purple flowers, tawny pubescence, multi-race resistance to *Phytophthora megasperma* as governed by the Rps1k gene, and resistance to Roundup branded herbicides. However, 91M90 contains allele 1 at the IDH1 isozyme locus and allele A at the MDH isozyme locus, whereas 92B05 contains allele 2 at the IDH1 isozyme locus and allele B at the MDH isozyme locus (see table below).

	ACO2	ACO3	ACO4	ACP	DIA	ENP	IDH1	MDH	MPI	PHI1
92B05	2	1	1	A	B	A	2	B	A	1
91M90	2	1	1	A	B	A	1	A	A	1

the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. B control number for this collection of information is (0581-0055). The time required to complete this information collection is estimated to average 30 minutes per response, including the time for instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, c.) should contact the USDA's TARGET Center at 202-720-2600 (voice and TDD).

plaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326C, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (DD). USDA is an equal opportunity provider and employer.

**U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705**

**EXHIBIT C  
(Soybean)**

**OBJECTIVE DESCRIPTION OF VARIETY  
SOYBEAN (*Glycine max* (L.) Merr.)**

<b>NAME OF APPLICANT(S)</b> Pioneer Hi-Bred, International	<b>FOR OFFICIAL USE ONLY</b>
<b>ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code)</b>	<b>PVPO NUMBER</b>
7200 62nd Avenue P.O. Box 1004 Johnston, IA 50131-1004	200300088
	<b>VARIETY NAME</b> 91M90
	<b>TEMPORARY OR EXPERIMENTAL DESIGNATION</b> 

**PLEASE READ ALL INSTRUCTIONS CAREFULLY:** Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in the first box (e.g. 

9	9	9
---	---	---

 or 

0	9
---	---

) when number is either 99 or less or 9 or less respectively. Data for quantitative

plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used:

Please answer all questions for your variety; lack of response may delay progress of your application.

**A. MORPHOLOGY**

**Seed Shape**

- |  |  |
|--|--|
| <table border="1" style="width: 40px; height: 40px; margin: 0 auto;">3</table> <p>1 = Spherical<br/>(L/W, L/T, and T/W ratios &lt; 1.2)</p> <p>3 = Elongated<br/>(L/T ratio . 1.2; T/W ratio &lt; 1.2)</p> | <p>2 = Spherical - Flattened<br/>(L/W ratio &gt; 1.2; L/T ratio &lt; 1.2)</p> <p>4 = Elongate - Flattened<br/>(L/T ratio &gt; 1.2; T/W ratio &gt; 1.2)</p> |
|--|--|

**Seed Coat Color:**

- |  |            |           |           |           |                               |
|--|------------|-----------|-----------|-----------|-------------------------------|
| <table border="1" style="width: 40px; height: 40px; margin: 0 auto;">1</table> | 1 = Yellow | 2 = Green | 3 = Brown | 4 = Black | 5 = Other<br>(Please Specify) |
|--|------------|-----------|-----------|-----------|-------------------------------|

**Seed Coat Luster:**

- |  |          |           |
|--|----------|-----------|
| <table border="1" style="width: 40px; height: 40px; margin: 0 auto;">1</table> | 1 = Dull | 2 = Shiny |
|--|----------|-----------|

**Seed Size:**

<table border="1" style="width: 60px; height: 40px; margin: 0 auto;">15.6</table>	grams/100 seeds
---	-----------------

**Hilum Color:**

- |  |           |   |           |          |                     |
|--|-----------|---|-----------|----------|---------------------|
| <table border="1" style="width: 40px; height: 40px; margin: 0 auto;">3</table> | 1 = Buff  | 2 = Yellow  | 3 = Brown | 4 = Gray | 5 = Imperfect Black |
|  | 6 = Black | 7 = Other (Please Specify) <table border="1" style="width: 100px; height: 20px;"></table> |           |          |                     |

## A. MORPHOLOGY (Continued)

Cotyledon Color:

1

1 = Yellow

2 = Green

200300088

Seed Protein Peroxidase Activity:

2

1 = Low

2 = High

Hypocotyl Color:

3

1 = Green  
( 'Evans' or 'Davis' )

2 = Green with Bronze  
Bands below Cotyledons  
( 'Woodworth' or 'Tracy' )

3 = Light Purple  
below Cotyledons  
( 'Beeson' or 'Pickett 71' )

4 = Dark Purple extending to  
unifoliate leaves  
( 'Hodgson', 'Coker', or

Leaflet Shape:

3

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Please Specify)

Flower Color:

2

1 = White

2 = Purple

3 = White with a Purple Throat

Pod Color:

1

1 = Tan

2 = Brown

3 = Black

Pubescence Color:

2

1 = Gray

2 = Brown (Tawny)

3 = Light Tawny

Plant Habit:

3

1 = Determinate

2 = Semi - Determinate

3 = Indeterminate

4 = Intermediate

Maturity Group:

04

1 = 000

2 = 00

3 = 0

4 = I

5 = II

6 = III

7 = IV

8 = V

9 = VI

10 = VII

11 = VIII

12 = IX

13 = X

14 = XI

15 = XII

Maturity Subgroup:

9

Please enter a value from 0 - 9

## B. DISEASE REACTION

0 = Not Tested

1 = Susceptible

2 = Resistant

3 = Tolerant

Bacterial

0

Bacterial Pustule (*Xanthomonas campestris* pv. *glycines* (Nakano) Dye)

1

Bacterial Blight *Pseudomonas syringa* pv. *glycinea* (Coerper) Young, Dye, and Wilkie)

0

Wildfire Blight *Pseudomonas syringa* pv. *tabaci* (Wolf Foster) Young, Dye, Wilkie)

**Fungal**

200300088

**Brown Spot** (*Septoria glycines* Hemmi)

**Frogeye Leaf Spot** (*Cercospora sojina* Hara)

race 1       race 2       race 3       race 4

race 5       race 6       **Other (Please Specify)**

**Target Spot** (*Corynespora cassicola* (Berk. Curt.) Wei)

**Downey Mildew** (*Peronospora trifoliorum* var. *manchuric* (Naum.) Syd. ex Gäum)

**Powdery Mildew** (*Microsphaera diffusa* Cke. and Pk.)

**Brown Stem Rot** (*Phialophora gregata* (Allington Chamberlain) W. Gams.)

**Stem Canker** (*Diaporthe phaseolorum* (Cke. and Ell.) Sacc. var. *caulivora* Athow and Caldwell)

**Pod and Stem Blight** (*Diaporthe phaseolorum* (Cke. and Ell.) Sacc. var. *sojae* (Lehman) Wehm)

**Purple Seed Stain** (*Cercospora kikuchii* (T. Matsu. and Tomoyasu) Gardener)

**Rhizoctonia Root Rot** (*Rhizoctonia solani* Kühn)

**Phytophthora Root Rot** (*Phytophthora megasperma* Drechs. f. sp. *glycinea* (Kuan Erwin))

<input type="text" value="0"/> race 1	<input type="text" value="0"/> race 8	<input type="text" value="0"/> race 15	<input type="text" value="0"/> race 22
<input type="text" value="0"/> race 2	<input type="text" value="0"/> race 9	<input type="text" value="0"/> race 16	<input type="text" value="0"/> race 23
<input type="text" value="2"/> race 3	<input type="text" value="0"/> race 10	<input type="text" value="0"/> race 17	<input type="text" value="0"/> race 24
<input type="text" value="2"/> race 4	<input type="text" value="0"/> race 11	<input type="text" value="0"/> race 18	<input type="text" value="1"/> race 25
<input type="text" value="0"/> race 5	<input type="text" value="0"/> race 12	<input type="text" value="0"/> race 19	<input type="text" value="0"/> race 26
<input type="text" value="0"/> race 6	<input type="text" value="0"/> race 13	<input type="text" value="0"/> race 20	<input type="text"/> <b>Other (Please Specify)</b>
<input type="text" value="2"/> race 7	<input type="text" value="0"/> race 14	<input type="text" value="0"/> race 21	<input type="text"/>

**Bud Blight** (Tobacco Ringspot Virus)

**Yellow Mosaic** (bean Yellow Mosaic Virus)



**B. DISEASE REACTIONS** (Continued) 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Tolerant

**Fungal**

Cowpea Mosaic (Cowpea Chlorotic Virus)

Pod Mottle (Bean Pod Mottle Virus)

Seed Mottle (Soybean Mosaic Virus)

200300088

**Nematode**

**Soybean Cyst Nematode** (*Heterodera glycines* Ichinohe)

<input type="text" value="2"/> race 1	<input type="text" value="0"/> race 4	<input type="text" value="0"/> race 9
<input type="text" value="0"/> race 2	<input type="text" value="2"/> race 5	<input type="text" value="0"/> race 14
<input type="text" value="2"/> race 3	<input type="text" value="0"/> race 6	<input type="text"/> Other (Please Specify)

Lance Nematode (*Hoploaimus columbus* Sher)

Southern Root Knot Nematode (*Meloidogyne incognita* (Kofoid and White) Chitwo)

Northern Root Knot Nematode (*Meloidogyne hapla* Chitwood)

Peanut Root Knot Nematode (*Meloidogyne arenaria* (Neal) Chitwood)

Reniform Nematode (*Rotylenchus reniformu* Linwood and Olivera)

Javanese Nematode (*Meloidogyne javanica* (Treub) Chitwood)

Other Nematode (Please Specify)

**C. PHYSIOLOGICAL RESPONSES**

0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Tolerant

Iron Chlorosis on Calcareous Soil

Phosphorus

Boron

Aluminum

Salt

Drought

Other (Please Specify)

## D. INSECT REACTIONS

0 = Not Tested    1 = Susceptible    2 = Resistant    3 = Tolerant

### Fungal

Mexican Bean Beetle (*Epilachna varivestis* Mulsant)

Potato Leaf Hopper (*Empoasca fabae* (Harris))

Other (Please Specify)

200300088

## E. HERBICIDE REACTIONS

0 = Not Tested    1 = Susceptible    2 = Resistant

Metribuzin

Bentazone

Sulfonylurea

Glyphosate

Glufosinate

Pendimethalin

Other (Please Specify)

## F. TRANSGENIC COMPOSITION

Has the development of the subject variety included the insertion of genetic material from an organism other than a soybean, or, the removal of genetic material from the application variety? ☒ Yes ☐ No

If yes, please complete the following information requests\*. Use additional pages if necessary.

1. Please state the vector's name:

2. Please state the vector components:

3. Please describe the genetic material successfully transferred into the subject variety:

4. Please describe the insertion protocol:

\* A literature citation(s) explaining the four information requests above may be an acceptable alternative to completion of the "Transgenic Composition" portion of this form. This section is fully addressed in the following publication. Specific details of the vector components and insert elements are summarized in Figure 1 and Table 1 on page 1453. Padgett, S.R. et al. Development, Identification, and Characterization of a Glyphosate-Tolerant Soybean Line. 1995. Crop Science. 35:1451-

## G. BIOCHEMICAL MARKERS

Please describe any biochemical information here, which you believe will be helpful in further describing the subject variety (e.g. Simple Sequences Repeats, Restriction Fragment Length Polymorphisms, Isozymic Characterization). Use additional pages if necessary.

## H. COMMENTS

200300088

**Exhibit D. Additional Description of the Variety**

2003 00088

**Soybean Variety 91M90**

In Exhibit C we have identified variety 91M90 as susceptible to bacterial blight, brown spot, pod and stem blight, rhizoctonia root rot, bud blight, yellow mosaic, cowpea mosaic, pod mottle and seed mottle.

This does not mean that variety 91M90 is any worse for these problems than other varieties of similar maturity. Rather, we do not consider 91M90 to be immune to these problems. Therefore, we have chosen to be conservative and have identified the line as "susceptible".

Variety 91M90 is a late Group 1 variety. If Group 1 varieties are divided into tenths, the relative maturity of 91M90 is 1.9.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paper Reduction Act (PRA) of 1995.

**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)  Pioneer Hi-Bred International, Inc	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	2. VARIETY NAME  91M90
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)  7300 N.W. 62 <sup>nd</sup> Avenue P.O. Box 1004 Johnston, IA 50131-1004	5. TELEPHONE (Include area code)  515-254-2638	6. FAX (Include area code)  515-253-2478
7. PVPO NUMBER  <b>200300088</b>		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block.  
If no, please explain.☐ X YES ☐ NO9. Is the applicant (individual or company) a U.S. National or a U.S. based company?  
If no, give name of country☐ X YES ☐ NO

10. Is the applicant the original owner?

☐ X YES ☐ NO

If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO

If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO

If no, give name of country

11. Additional explanation on ownership (If needed, use the reverse for extra space):

**Please Note:**

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 6 minutes per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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